

The use of flipped classroom to learn a new language at the University

G. López Guerrero, M. M López Guerrero, J.M. Hernandez Lopez

Department of Analytical Chemistry, Faculty of Science, University of Málaga

The Flipped Classroom model consists on a type of blended learning that reverses the traditional learning environment by delivering instructional content outside of the classroom and usually on line. Most descriptions of the flipped classroom suggest that multimedia lectures be recorded so students can view them out of class and at their own pace as homeworks (Prober & Khan, 2013)

In higher education courses it has been suggested that class time should focus on knowledge application (Pluta, Richards, & Mutnick, 2013). It may also allow the teacher a better opportunity to detect errors in thinking.

The use of flipped class shows pedagogical approach for a number of reasons; for example, it allows students to learn at their own pace. This model puts more responsibility for learning on the students so students can work towards mastery of the material.

In this study, the students have to learn Chemistry. Learning how to name chemical compounds is a critical feature of chemistry that many students often find challenging. Naming compounds require both an understanding of the conventions and language of chemistry. (Taskin & Bernholt, 2014)

There is a little bit analogy between chemistry and foreign languages. Most languages have different alphabets for each one. In order to learn a second language, one needs to know the new symbols. After knowing the alphabet, the students are ready to begin the formation of chemical words. After a few classes of chemistry, the students are ready to attempt intelligent conversation by combining the chemical alphabet words into sentences, reactions.

In this work is reported a study that employed flipped class and computer simulations. The proposal of this study is intended to design and implement a teaching strategy for teaching and learning the chemical language, first of all they have to learn the chemical alphabet, the Periodic Table, after that, the students will have to learn how to write words as compounds and finally, they will be able to write sentences as reactions, so finally, students will have learnt the language which is built the chemistry

References

C. Prober, S. Khan Medical education reimagined: A call to action *Academic Medicine*, 88 (2013), pp. 1407-1410

W. Pluta, B. Richards, A. Mutnick PBL and beyond: Trends in collaborative learning. *Teaching and Learning in Medicine*, 25 (S1) (2013), pp. S9-S16

V. Taskin, S. Bernholt Students' understanding of chemical formulae: A review of empirical research. *International Journal of Science Education*, 36 (1) (2014), pp. 157-185